REMARKS

Of claims 1-58 which were contained in the pending application, claims 10-13 27 and 32 are canceled. Claim 58 was canceled in the Preliminary Amendment.

Rejections Under 35 U.S.C. §103(a)

The Examiner rejects the independent and most of the dependent claims under 35 U.S.C. §103(a) as being unpatentable over Goldberg et al. (WO 01/47368). The Examiner repeats the arguments in this regard from paper No. 20080215. The Examiner also considers the non-biodegradable polymers incorporated in the chewing gum of Goldberg et al. as optional, based on p. 4, lines 5-7 in Goldberg et al.

The applicant strongly traverses this view. Nowhere in Goldberg et al. is a biodegradable chewing gum disclosed.

The arguments for non-obviousness as set forth in the previous response still apply and as such it is believed that the original claim 1 was novel and non-obvious. However, a further limitation of claim 1 has been introduced in order to even more clearly point out the advantageous features of the present invention.

The Examiner's arguments are based on an interpretation of the wording on p.4, lines 5 -7 in Goldberg et al.:

> "*Apart from the degradable copolymers of the present invention, the composition of the gum base is* ***not critical*** *to the present invention.*"

The phrase "not critical" is by the Examiner interpreted as "optional" which, based on the further wording on page 4, is a misinterpretation. Page 4, lines 12 – 23 list suitable polymers for gum bases. These may not be critical in the sense that several combinations are possible with the degradable polymers disclosed. But the listed polymers are certainly not entirely optional. An interpretation along the lines of the

Examiner that everything but the biodegradable polymer is optional would ultimately lead to a chewing gum consisting of nothing but a degradable polymer which is a meaningless result.

In fact, the Examiners interpretation is opposing the teaching of Goldberg et al. The sole gum base example (example 48) of Goldberg et al. discloses a gum base containing 20% of a biodegradable polymer and 63.25% of non-biodegradable polymers. The skilled person is completely left alone with the question of how to prepare a biodegradable gum base. If 63.25% of the gum base (76% of the gum base polymers) is considered optional it is not obvious how to replace these optional polymers to obtain biodegradability and at the same time, obtain a gum base with an acceptable texture. It is even less obvious how the skilled person should arrive at the invention claimed in claim 1 of the pending application:

> 1. *Chewing gum comprising at least one biodegradable polymer, wherein the molecular weight of said biodegradable polymer is at least 105000 g/mol (Mn), wherein the chewing gum is substantially free of non-biodegradable polymers, and wherein the chewing gum comprises at least one softener.*

It is not clear from example 48 in Goldberg et al. which polymer is used in the gum base. The list of ingredients contains "Copolymer of Example 9", while the descriptive part of the example refers to the "the copolymer of Example 7". It is noted that neither of these polymers has a number average molecular weight (Mn) of at least 105000 g/mol. It is noted that degradable polymers which in prior art may be used in chewing gum in general may have molecular weights within a very broad interval. E.g. Goldberg et al. mentions that the polymers to be used should have a molecular weight (Mn) of from about 500 to 100,000 g/mol, preferably from about 10,000 to 90,000 g/mol (p.19 lines 19-20). Consequently, Goldberg et al. states to preferably use polymers of lower molecular weight (Mn) than the comparatively high molecular

weight of the polymers included in the chewing gum of the present invention. And according to the present invention, it is these high molecular weight polymers which confer the desired elastic properties to the gum base.

Even though the preferred molecular weights disclosed in Goldberg et al. are within a very broad interval, i.e. 10,000-90,000 g/mol, they are still below the molecular weight according to present claim 1. Learning from prior art, the skilled person would therefore not find any motivation to apply such high molecular weight polymers in a chewing gum.

The chewing gum disclosed in Goldberg et al. (Example 49) contains 5.2% biodegradable polymers and 16.4% conventional polymers. The person skilled in the art would not regard these 16.4% as optional chewing gum ingredients, despite the wording of p.4, lines 5-7. On the contrary, it is obvious from the disclosure in Goldberg et al. that conventional polymers are needed to obtain a chewing gum with acceptable texture and other desired characteristics. The Examiner's contention that preclusion of the conventional polymers or elimination of same from the gum base would have been obvious for the skilled person is therefore strongly contested by the applicant.

With the amendments carried out in this response, the claim has been restricted to that the chewing gum in question comprises at least one softener. This was not necessary for establishing novelty or non-obviousness, but it has been done in order to point out one of many additives or components of chewing gum, for which the present invention is advantageous, as it can be seen from several paragraphs from the application as filed.

It is noted that various chewing gum additives are often applied to chewing gum such as softener, emulsifier, flavor, sweetener etc. Each of these additives serves individual purposes in the chewing gum and as such the relevant amounts of each of these may vary between various types of chewing gum. However, sometimes the addition of such additives may cause problems, which also can be seen from the mentioned paragraphs from the application as filed. These are quoted here below in italic type (from page 2, lines 9-29 of the PCT-application as filed).

> *According to the invention, it has been realized that chewing gums made on the basis of biodegradable polymers are somewhat vulnerable to different conventional chewing gum additives or components. Most critically, it has been realized that softeners, which are highly needed when obtaining the desired chewing gum texture, tend to dissolve the chewing gums even when applied in small amounts.*
>
> *According to the invention, it has moreover been realized that this problem may be effectively dealt with by increasing of the molecular weight of at least one of the biodegradable polymers in the chewing gum when compared to conventional chewing gum polymers and thereby increasing the robustness of the chewing gum with respect to softeners, emulsifiers and e.g. flavor.*
>
> *According to the invention, it has moreover been realized that an increasing of the molecular weight of at least one of the biodegradable polymers and thereby an increasing of the rheological stiffness (G') may in fact be more than compensated by addition of softeners.*
>
> *In other words, according to the invention an improved texture of a biodegradable polymer containing chewing gum may in fact surprisingly be obtained by an initial worsening of the rheological properties of the biodegradable polymer and finally be more than compensated by the addition of suitable softeners.*

Hence it can be seen that according to the present invention, it has been discovered by the inventors that increasing the molecular weight of biodegradable polymers in the chewing gum may increase the robustness of the chewing gum with respect to softeners, emulsifiers and e.g. flavor. Of these, especially the softeners are critical and highly needed for obtaining the desired chewing gum texture, and therefore it is a very important and non-obvious finding that a higher molecular

weight of the degradable polymers may aid in avoiding dissolving of the chewing gums when applying softener.

Consequently it is submitted that for at least these reasons, the outstanding rejection under 35 U.S.C. §103(a) is improper and may not be maintained; indeed present claim 1 and consequently also the claims dependent hereon are non-obvious.

Double Patenting Rejection

Claims 1-57 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims: 1-62 of co-pending application 10/472,122; claims 1-54 of co-pending application 10/472,154; claims 1-67 of co-pending application 10/528,926; claims 1-64 of co-pending application 10/529,133; claims 1-20, 22-26, and 28-42 of co-pending application 10/529,137; and claims 1, 2, 10, 11, 13-18, 24-26 and 28-54 of co-pending application 11/088,109.

Upon indication of allowable subject matter in this case, Applicants will file the appropriate terminal disclaimers in order to overcome these rejections.

The present application as amended herein, is now in form for allowance and early reconsideration and allowance of the claims, as currently pending, is earnestly solicited.

Respectfully submitted,

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I hereby certify that this correspondence is being electronically filed with The Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, this 26th day of February 2008.

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